Vol. II. INDIANAPOLIS, Ia., OCTOBER 1, 1845. No. 19.

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S. V. B. NOEL, *Publisher and Printer.*

WESTERN FARMER AND GARDENER.

INDIANAPOLIS, THURSDAY, OCTOBER 1, 1846.

REVIEW.

COLMAN'S EUROPEAN AGRICULTURE.—Our readers have lost sight of this work for some time. The first five numbers were severely and justly criticised as being too light, and declamatory rather than useful. Mr. Colman, although aggrieved by the fidelity, has manifestly improved by it. The parts VI and VII, are altogether nearer what such reports should be, than any former ones.

In both numbers, especial attention is given to those grand features of modern agricultural improvement, in Great Britain, Draining and Subsoil-plowing.

In America, the process of Draining can be introduced with profit only in the vicinity of large markets, where land has become very valuable. Many other measures which render English husbandry so renowned, can never, or not for a long time be introduced into the United States. Still, it is instructive to learn what is doing in other lands; and though we may not require these expensive improvements, the method of effecting them may afford important hints for other parts of farming labor.

To most of our readers, the process of creating land, by what is called *Warping*, will be new. An account is given of operations on the river Humber. The stream holds in solution great quantities of silt, silecious and aluminous matter. The contiguous land is divided into compartments, the river water conveyed into them, where, remaining tranquil, it deposits its burden of *warp*, so called. The water is let off at low tide into the sea. Land is raised, in the course of a year, from eighteen inches to two feet, by this process.

"The amount of mud thus deposited in a single season was, as I was informed, as much as eighteen inches. Mr. Creyke says, "that in one spring, during ten or twelve tides, he has known 10 to 15 akers to have been warped the thickness of from one to three feet; and that in June, 1829, a compartment was commenced of 160 akers, which was finished in January, 1826, a period of only seven months. During that period, a general deposit took place of between one and three feet; but that was an extraordinary season, and the compartment lay in a favorable situation for being warped."

The value of such land is very great. Bog lands, that were worth only 1s. 6d., annual rent, became worth 50s., per aker. The crops obtained on such land are very large, and it is considered too rich for wheat, until it had been severely exhausted by other crops, such as potatoes, flax, rape-seed, and clover. It has been known to yield ninety bushels of beans per aker, and from three hundred to nearly six hundred bushels of potatoes; and three tons of clover at a first cutting, with a good second crop, and abundant pasturage afterwards."

A process somewhat similar to this, takes place on many of our river bottoms, subject to annual overflow, and they receive a large and fertilizing deposit.

The first form of Drainage is that by which land subject to overflow or inundation is protected from such excess of water upon it. This is done by the exclusion of water by embankments and by ejecting the water in some cases, by steam engines; 500,000 acres have been redeemed in Ancholme and Bedfordshire districts.

We will extract a brief account of a case of steam-drainage.

"At Podes-hole, which I visited, there are in operation in two steam-engines of the most beautiful construction—the one of sixty, and the other of eighty horse power; and these are effectual to the draining of 40,000 akers of what is called the *Deeping Fen*. The upper part of these lands, which are thus drained, was peat meadow; the lower part was salt marsh. These lands are now in the highest degree productive; producing fine crops of wheat, oats, potatoes, and swedes, besides furnishing the very best of pasturage and hay land."

6000 akers were thus drained in Nottinghamshire. Lord Spencer drained 500 acres by steam power. Although it would be more than idle for American farmers, to imitate, at least for centuries, such expensive works for redeeming land, while they have a whole continent of vacant, fertile land at their back, yet they cannot but admire the enterprise and scientific skill with which they are performed in countries where the after crops will abundantly remunerate the expense.

The more common form of Draining—farm-draining, occupies a large portion of both the VI and VII reports

Draining by open ditches, is the rudest form of improvement—now, never practiced by any who make pretension to thoroughness.

Elkinton's method of Draining, employed when the soil is underlaid by a hard impervious shell resting upon a porous, open under-soil, consists in piercing wells or draining-holes through the under-crust, by means of which the water is sunk away. It is manifest that it will succeed only when the soil beneath is open and permeable to water.

Then, next, are detailed various methods of forming covered drains: by filling in fagots and ramming the earth compactly upon them—by *plug-draining*, or that in which a mould is placed in the bottom of the ditch—covered with clay, which is rammed down, and then the plug drawn out, leaving a clay arch. On suitable soil, this cheap drain has been found to answer a good purpose. One farmer is mentioned, who, in four years, constructed 300 miles of this kind of drain on his grounds. The argument is handsomely put by Mr. Posey.

"I do not understand him to prefer it to tile-draining, excepting on the ground of cost. The objection—want of permanence—is met by the small comparative expense. "Where the whole of a large farm requires to be drained, and the means both of landlord and tenant are limited, there can scarcely be a doubt which is best for both of them,—to drain 100 akers for forty years, or 300 akers for twenty years."

Drains are formed with *peat turf* coverings which are said to last well in firm clay soils.

Drains are constructed by filling in the bottom of the ditch, masses of broken stone; inverted turf is placed upon them to prevent fine soil from washing down and choking the drain—and the ditch is then filled with soil. These drains are permanent and work freely.

Mr. Colman next speaks of draining in connection with subsoil plowing, as first efficiently practiced by a civil engineer of no small celebrity, Mr. Smith, of Deanston.

"Mr. Smith, of Deanston, near the village of Doune in Scotland, (of whom I have before spoken,) conceived the plan of laying his fields thoroughly dry by a careful system of drainage, and next by subsoiling his fields—that is, a mode of deep-plowing, which as I have described in a former number, consists first in plowing with a common plow and following in the same furrow with a plow of a peculiar construction, called a *subsoil-plow* being a plow without a mould-board, by which the lower stratum is thoroughly broken up, loosened, and stirred, but not brought to the surface. The active soil is still kept upon the top; the lower, or subsoil, is rendered permeable to the roots of the plants; the air has access to it, and enriches it, and, by being loosened, the water filters through it, passing off by the drains. His operations attracted so much attention, and have led to such great improvements throughout the country in draining, that his name as a great improver is destined to be long remembered, and his system is sometimes, after the name of his residence, called "Deanstonizing."

He recommends that the bottom of the main drain should be 3½ or 4 feet below the surface; and says that a drain ten inches wide, and twelve inches deep, will discharge the water from a hundred akers. Many persons, in undertaking the draining of flat lands are discouraged by the difficulty of finding an outfall for the water; but he deems that one foot fall in a hundred yards, with a drain of the above dimensions, may be relied on. "It has been proved, in practice, that a watercourse 30 feet wide and 6 feet deep, giving a transverse sectional area of 180 square feet, will discharge 300 cubic yards of water in a minute, and will flow at the rate of one mile per hour, with a fall of no more than 6 inches per mile." It is his advice that this main drain should be covered as well as the side drains; but others recommend that it should be left open, that it may be always easy to watch the running of the side drains which empty into it. Three objections, which among others, lie against leaving the main drain open,—such as the falling in of the sides, the loss of ground, and the danger of the access of vermin to the side drains, (where they are formed with tiles,)—are obviated by Mr. Morton, in an ingenious manner, as I saw on Lord Ducie's model farm. I have already slightly referred to it. The main drain, in this case, runs through the lowest part of the land; but it is made so broad and flat that the grass can be mowed

down to the very watercourse, or a cart could be driven without overturning, on the very edge or side of it, though this would never be advisable, for fear of injury to the drains. The farm road, in this case, is made at about the distance of sixteen feet from the centre of this open drain, or brook. In this case, then, there is no loss of land, and no bridges are required in the crossing. Where the side drains enter the main drains, one link in the chain of pipes is omitted, and the remainder of the distance is laid with small broken stone, which allows of the passage of the water, but forbids the access of any vermin into the drain.

The next step is to lay out the parallel drains; and the frequency of these drains, or the distance which they should hold from each other, depends upon the character of the subsoil. "If," says Mr. Smith, "it consists of a stiff and strong till, or a dead sandy clay then the distance from drain to drain should not exceed from 10 to 15 feet; if a lighter and more porous subsoil, a distance from 18 to 24 feet will be close enough; and in very open subsoils 40 feet distance may be sufficent. The drains," he adds, "should be run parallel to each other, and at regular distances; and should be carried througout the whole field without reference to the wet or dry appearance of portions of the field, as *uniform* and *complete* dryness is the object; and portions of the land, which may be considered dry in their natural state, will appear wet when compared with those parts which have been properly drained."

Practical men advise that the length of a drain should never exceed 300 yards; and, where it crosses springs of water, it should not exceed 200 yards. The rule, in making drains, is, to begin with a complete formation of the main drain, and then proceed with the parallel drains, from the point where they enter the main drain to their upper extremity. In filling up, the order is to be reversed, and the completion of the drain is to commence at the upper end, and proceed to its termination with the lower end, or with the entrance into the main drain. It is extremely desirable to have, if possible, all the drains opened before any portion of them is filled in, that their partial working may be watched, and a right inclination secured; and a very eminent and successful improver advises, where draining is attempted in a stiff soil of clay, for example, after the tiles are laid, to fill in but partailly at first, leaving the land to be swollen and cracked by the winter frosts,—for, such fissures being once opened, the water will make for itself through them communications with the drain which will become permanent."

Tile Draining, differs from others, in having firm clay pipes or channels, laid in the bottom of the drain instead of stones, fagots, &c.

The sections of earthen pipe are technically called *tiles*. They are made by machines.

"The speed with which some of these machines are operated, is quite remarkable; it being asserted on authority which may be relied upon, that Hatcher's machine, when worked by a man and three boys, will turn out nearly 11,000 pipe tiles, of one inch bore in a day of ten hours, and so in proportion for pipes of a larger diamater. A machine invented by Mr. Scragg, of Calveley, Cheshire, "is equivalent," says Mr. Parkes, the engineer of the Royal Agricultural Society, "to the easy manufacture of more than 20,000 pipes of an inch bore per day of ten hours, and so on in proportion for other sizes."

We were somewhat surprised at the statement of the facts which follow, but know of no reason to doubt them.

"*Important Points in draining.*—Some most important points in draining seem to have been but recently established. The first is, that water enters the drain from the bottom, rather than from the top; that is, its tendency is always to seek the lowest level. The second point, which seems well determined, is, that pipes of an inch bore are sufficient, when laid down at proper distances, for the rapid and effectual removal of any quantity of water from the land, which is the effect of rain upon the land. The third point is, that deep draining, though the drains be less frequent, is much more effectual than shallow draining, and that where drains of two feet deep have failed to run, or even drains of three feet have been ineffectual, drains of four feet on the same land have shown the presence of large quantities of water in the land, which otherwise would not have been removed. I have seen this completely demonstrated; and the testimonies on this subject are so multiplied within my own knowledge, that it may almost be affirmed that a single drain of four feet in depth will be more effectual in the drainage of a soil, than two drains of the same size laid at any depth less than three feet. The Duke of Portland, when I had the pleasure of examining his magnificent improvements at Welbeck Abbey, pointed out to me some land, which has been deemed sufficiently drained, and indeed much more deeply than was usual, but which, notwithstanding, continued to occasion rot to the sheep which were fed upon it; and the evil was not effectually removed until the drains were sunk to the depth of eight feet.

"Several respectable and intelligent farmers in Kent; who had laid drains very deeply in clays and stiff soils, assert that the flow from the deepest drains invariably commences and ceases sooner than from shallower drains after rain." This is a curious fact. That it should flow more copiously in such deep drains is to be expected, from the fact of a deep drain's affecting a larger extent of land than a shallow drain; but, as the gentleman who states this fact suggests, it is not so easy to account for the water falling upon the surface appearing in a drain four feet deep sooner than in two feet deep. The fact, however, seems well established."

As the facts in respect to the deep drains are very curious, we give a single other extract from a Mr. Hammond.

"I found," he says, "after the late rains, that a drain eight feet deep ran eight pints of water, in the same time that another three feet deep ran five pints, although placed at equal distances. The circumstances under which this experiment was made, as well as its indications, deserve particular notice. The site was the hop-ground before referred to, which had been under-drained thirty-five years since, to a depth varying from 24 to 30 inches; and though the drains were laid somewhat irregularly and imperfectly, they had been maintained in good action. Mr. Hammond, however, suspecting injury to be done to the plants and the soil by bottom water, which he knew to stagnate below the old drains, again under drained the the piece in 1842, with inch pipes, in part to 3 feet deep, and in part to 4 feet in depth, the effect proving very beneficial. The old drains were left undisturbed, but thenceforth ceased running, the whole of the water passing below them to the new drains as was to be expected. The distance between the new drains is 26 feet, their length 150 yards, the fall identical, soil clay. The experiment was made on two drains adjoining each other, i. e., on the last of the series of the three feet, and on the first of the series of four feet drains. The sum of the flow from these two drains, at the time of the trial, was 975 pounds per hour, or at the rate of 194 tons per acre in 24 hours: the proportionete discharge, therefore, was 12 tons by the four feet, and 7½ tons by the three feet

drain. No springs affected the result. Hence we have two phenomena very satisfactorily disclosed—first, that the deepest drain received the most water second, that it discharged the greatest quantity of water in a given time, the superficial area of supply being the same to both drains."

The extent to which draining is applied to some estates in England will surprise many of our readers.

"The Duke of Portland, it is stated, had some time since completed more than 7000 miles of drainage on his estates, although much of this was done before the system of subsoil-plowing was introduced. The Duke of Bedford informed me that he made about 200 miles of drainage on his estate in a year, and about 50 miles in his Park grounds. This was all executed in the most excellent manner."

Another number will be required for a suitable notice of subsoil-plowing, as practiced in connection with thorough-draing.

CULTURE OF HOPS.

I have a piece of level rich land, clay bottom, and wish to try it in hops. Will it do? If so, how shall I start the vines? How far apart shall they be planted? How tended? How poled and when? How and when gathered? How dried? H.

We shall state such facts as are within our reach, and leave each one to make his own calculations. We have understood that a company of Germans, in this vicinity, were engaged somewhat largely in the culture of hops: can any one inform us more particularly of the mode in which they are raised in Indiana and Ohio?

The Hop Plant.—The hop belongs to the natural order, Urticeæ, or the nettle and hemp family. Its root is perennial; its stem annual, twining to the height of from fifteen to twenty feet. They bear male and female flowers on different plants, and the female is the only one used for planting.

Soil.—Rich, friable clay, and hearty loams, and vegetable molds are the best soils. A wet subsoil is fatal to their health. Any rich, light, dry (but not drouthy) soil suits them. A large crop may be obtained from our rich alluvions, or bottom lands; but although uplands yield a less crop, the quality is regarded as decidedly superior. A wet clay subsoil is not good.

Planting.—Plants are set out in rows six to eight feet apart and six to eight feet from hill to hill in the row. Rooted plants, but more frequently cuttings from old plants are employed; five or six being planted to the hill. Poles from fifteen to twenty feet in length are placed to each hill. In England from three to six and even eight are placed to each hill. But three is about the average number.

Harvest.—No crop is more variable than this; the yield per aker, ranging according to the season from 300 to 2000 lbs. On rich bottom lands 2000 lbs. may be not unfrequently raised; but on an average, from 700 to 1000 lbs. may be reckoned.

The plants bloom in July, and are ready for harvest by the first of September. It is necessary to gather them promptly, as they soon deteriorate if allowed to remain after they are ripe. As soon as gathered they are kiln-dried, then placed from ten days to two weeks to cool, and, finally, they are baled for market.

General Considerations.—A plantation will last in full vigor for ten years, and then will decline, but gradually, for ten more, when it is to be broken up. Fifteen years, perhaps, is the average duration of the hop plantations. They exhaust the soil, withdrawing much and returning little to it. Hops vary exceedingly in price in different years, not only on account of the varying supply arising from the uncertainty of yield, but from the *quality* of the article in different years. The average price in the United States is not far from *sixteen cents* per pound. Sometimes they rise to thirty, forty, and even fifty cents per pound.

From the moment of sprouting, in the spring, until the hop is ready for the kiln, they are liable to disaster from insects or disease. Nowhere has more experience been had in their cultivation than in England. Brown says, "they are exposed to more diseases than any other plant with which we are acquainted, and the trade offers greater room for speculation than any other exercised within the British dominions." Parkinson with a quaint play upon the word hop, says: "the *hop* is said to be a plant very properly named as there is never any certainty in cultivating it."

If the crop is to be planted largely, it would seem plain, from the foregoing, that one should have capital enough to be able to bear some losses, at least, at first. For ordinary cultivators, if the experiment is to be made, it would be better to begin with a small plantation at first, embarking more largely as knowledge and skill increase, and as experiance determines its profitableness.

American Herd Book.—As a work of reference, in determining the pedigree and relationships of the American short-horn cattle, this will be an invaluable work. It is the first of the kind ever issued in America. Mr. L. F. Allen, the author, complains of the great indifference of the breeders of superior cattle to this enterprise. He states that there are about one thousand prime, well-bred short-horns in the United States; less than six hundred of which he has been able to register. He only experiences in his sphere, what every man learns who labors for others. Whoever wishes to do good, must be willing to labor alone,

against impediments, with little remuneration except the pleasure of doing well. But when at length the work is *done*, and is known to be important, he will reap as he has sown.

THE SCIENCE OF BAD BUTTER.

We took occasion, last year, to give our opinion of the butter which is so largely brought to this market. The article was deemed severe; but if they who think so had eaten of the butter they would have regarded *that* as the more pungent of the two. We have waited another year; and are now prepared more fully to testify against that utter abomination, slanderously called, butter, so unrighteously exchanged in our market for good money. For the most part, the cream is totally depraved at the start, and churning, working, and packing are only the successive steps of an evil education by which bad inclinations are developed into overt wickedness. We determined to keep an eye upon the matter; and now give, from life, the natural history of the butter sold at Indianapolis.

Before doing this, we will express an opinion of what is *good butter*.

Good butter is made of sweet cream, with perfect neatness; is of a high color, perfectly sweet, free from buttermilk, and possesses a fine grass flavor.

Tolerable butter, differs from this only in not having a *fine flavor*. It is devoid of all unpleasant taste, but has not a high relish.

Whatever is less than this is bad butter; the catalogue is long, and the descending scale is marked with more varieties than one may imagine.

Variety 1. *Butter-milk butter.*—This has not been well worked, and has the taste of fresh buttermilk. It is not *very* disagreeable to such as love fresh butter-milk; but as it is a flavor not expected in good butter, it is usually disagreeable

Variety 2. *Strong butter.*—This is one step farther along, and the buttermilk is changing and beginning to assert its right to predominate over the butteraceous flavor; yet it may be eaten with some pleasure if done rapidly, accompanied with very good bread.

Variety 3. *Frowy or frowsy butter.*—This is a second degree of strength attained by the buttermilk. It has become pungent, and too disagreeable for any but absent-minded eaters.

Variety 4. *Rancid butter.*—This is the putrescent stage. No description will convey, to those who have not tasted it, an idea of its unearthly flavor; while those who *have*, will hardly thank us for stirring up such awful remembrances by any description.

Variety 5. *Bitter butter.*—Bitterness is, for the most part, incident to winter-butter. When one has but little cream and is long in collecting enough for the churn, he will be very apt to have bitter butter.

Variety 6. *Musty butter.*—In summer, especially in damp, unventilated cellars, cream will gather mold; Whenever this appears, the pigs should be set to churn it. But instead, if but just touched, it is quickly churned; or, if much molded, it is slightly skimmed, as if the *flavor* of mold, which has struck through the whole mass, could be removed by taking off the colored portion! The peculiar taste arising from this affection of the milk, blessed be the man who needs to be told it!

Variety 7. *Sour-milk butter.*—This is made from milk which has been allowed to sour, the milk and cream being churned up together. The flavor is that of greasy sour milk.

Variety 8. *Vinegar-butter.*—There are some who imagine that all milk should be *soured* before it is fit to churn. When, in cool weather, it delays to change, they expedite the matter by some acid—usually vinegar. The butter strongly retains the flavor thereof.

Variety 9. *Cheesy-butter.*—Cream comes quicker by being heated. If sour cream be heated it is very apt to separate and deposite a *whey:* if this is strained into the churn with the cream, the butter will have a strong cheesy flavor.

Variety 10. *Granulated butter.*—When, in winter, sweet cream is over-heated, preparatory to churning, it produces butter full of *grains*, as if there were meal in it.

Variety 11. In this we will comprise the two opposite kinds—*too salt*, and *unsalted butter*. We have seen butter exposed for sale with such masses of salt in it that one is tempted to believe that it was put in as a make-weight. When the salt is coarse, the operation of eating this butter affords those who have good teeth, a pleasing variety of grinding.

Variety 12. *Lard-butter.*—When lard is cheap and abundant, and butter rather dear, it is tho't profitable to combine the two.

Variety 13. *Mixed-butter.*—When the shrewd house-wife has several separate churnings of butter on hand, some of which would hardly be able to go alone, she puts them together, and those who buy, find out that "Union is *strength!*" Such butter is pleasingly marbled; dumps of white, of yellow, and of dingy butter melting into each other, until the whole is ring-streaked and speckled.

Variety 14. *Compound-butter.*—By compound butter we mean that which has received contribu-

tions from things animate and inanimate; feathers, hairs, rags of cloth, threads, specks, chips, straws, seeds; in short, everything is at one time or another to be found in it, going to produce the three successive degrees of dirty, filthy, nasty.

Variety 15. *Tough-butter.*—When butter is worked too long after the expulsion of buttermilk, it assumes a gluey, putty-like consistence, and is tough when eaten. But oh! blessed fault! we would go ten miles to pay our admiring respects to that much-to-be-praised dairy-maid whose zeal leads her to work her butter too much! We doubt, however, if a pound of such butter was ever seen in this place.

Besides all these, whose history we have correctly traced, besides butter tasting of turpentine from being made in pine churns; butter bent on travelling, in hot weather; butter dotted, like cloves on a boiled ham, with flies, which Solomon assured us, causeth the ointment to stink; besides butter in rusty tin pans, and in dirty swaddling clothes; besides butter made of milk, drawn from a dirty cow, by a dirtier hand, into a yet dirtier pail, and churned in a churn the dirtiest of all; besides all these sub-varieties, there are several others with which we have formed an acquaintance, but found ourselves baffled at analysis. We could not even guess the cause of their peculiarities. Oh Dr. Leibig! how we have longed for your skill in analytic chemistry! What consternation would we speedily send among the slatternly butter-makers, revealing the mysteries of their dirty doings with more than mesmeric facility!

And now, what on earth is the reason that good butter is so great a rarity? Is it a hereditary curse in some families? or is it a punishment sent upon us for our ill-deserts? A few good butter makers in every neighborhood are a standing proof that it is nothing but bad housewivery; mere, sheer carelessness which turns the luxury of the churn into an utterly nauseating abomination.

Select cows for quality and not for quantity of milk; give them sweet and sufficient pasturage; keep clean yourself; milk into a clean pail; strain into clean pans—(pans scalded, scoured, and sunned, and if tin, with every particle of milk rubbed out of the seams.) While it is yet sweet, churn it; if it delays to come, add a little salaratus; work it thoroughly, three times, salting it at the second working; put it into a cool place, and then, when, with a conscience as clean and sweet as your butter, you have dispatched your tempting rolls to market, you may sit down and thank God that you are an honest woman!

HORTICULTURE AND WINE IN CINCINNATI.

The Charter, Constitution, and By-laws of the Cincinnati Horticultural Society, with a Report of its Transactions for 1843–1845. *Cincinnati, L'Hommedieu & Co., Printers,* 1846.

Whatever may have been the squealing celebrity of Porkopolis, Cincinnati seems destined to merge the glory of that name in the more agreeable title, City of Vinyards. That she is the Queen City none denies. But on account of what single excellence, it might be difficult, for some, to say. A queen of slaughter-pens might be a hearty buxom lass, but, withal, not exactly the personage for which knights (Sancho always excepted,) love to break lances. A queen of foundries and stithies, she might be, and not necessarily, on that account, a ruddy brunnette; inasmuch as Sir Vulcan, was, once before, the husband of Venus—queen of beauty. A blushing queen of strawberry beds would be quite romantic; but yet more appropriate if her jurisdiction were extended over vines and purple clusters and vinyards and orchards. But whether it be pork, or iron, or gardens, or vinyards, or observatories, Cincinnati is acknowledged on all hands to be the QUEEN CITY.

Leaving her commercial glories out of view, we think Cincinnati has done more for horticulture than any American city, taking into the account her recent origin and her means. In all other cities horticulture has been the child of wealth and leisure. It has *followed* commercial or manufacturing prosperity. But in this city, it began with them and has kept pace with them; so that one wonders which most to admire, the thrift of industry and skill, or the elegant taste which is so generally evinced in the cultivation of fruit, and shrub and flower.

This first volume of the Transactions of the Cincinnati Horticultural Society, is eminently worthy of that enterprising corporation.

The thoughts of several principle friends of horticulture seem much directed to the subject of vine culture, and the manufacture of wine. There are more than eighty-three vinyards in the vicinity of the city containing not far from 400 akers of land! From 114 akers during the season of 1845, more than 23,000 gallons of wine were manufactured, and there was not more than half a crop obtained in that season. The average yield of wine per aker, for five years in succession, Dr. Flagg states to be from 450 to 500 gallons per annum.

Dr. Flagg thinks the culture of the grape will be the finishing stroke to the temperance enterprise; affording a wholesome beverage from our hills in place of "corn juice" from our bottoms, and beer from our hop and barley fields.

The arguments urged by Dr. Flagg with great sincerity, are the often-quoted fact, that the inhabitants of wine-making countries are favorably distinguished for temperance; and that a palatable and wholesome beverage—pure wine—would supercede the use of violent liquors. If we thought that our people would become temperate upon such conditions, we should be glad to see a vinyard on every hill side, and a wine-vat to every farm-house. But there is no reason to expect any such result. Vinyards, in Europe, exist among a quiet, comparatively unenterprising peasantry. They have been *trained* to moderation; necessity has made them temperate in all things—in food, in dress, in expense, and in drink. The popular habits are not so excitable as with us; business runs in quiet streams, and politics are unknown. With us business is boisterous, pleasure, obstreperous and politics, outrageous. Our people are anything but quiet; they are hot, hot in tongue and blood. It is wide enough of the mark to suppose that the same cause existing among two entirely dissimilar people, would, of course, produce the same results. We might as well say that vinyards would make our people eat less meat, less corn and pork, because the residents of wine districts were known to be addicted to a vegetable diet. The probable consequences of abundant cheap wine must be judged, not by what would happen in France, among abstemious peasants, nor on the Rhine, among economical and sober Germans; but by the tastes, habits, and tendencies of our own people. In this land everything tends to excitement. Men live upon a higher key, and live faster, and live much more full of exhileration than the same classes do in foreign lands. Our people drink not for the *taste* but for the *excitement* of liquor; and, so that wine, beer, or whiskey will bring them up to the right key, the question of wholesomeness is quite unimportant. Our people are free, and therefore have a right to live in the violation of natural laws; and a right, constantly exercised, of having fevers on account of surfeitings and of dying early and by thousands by reason of gross excesses.

Pleasures and business are esteemed by the volume of blood which they can drive, the pulse they can raise, the heat of excitement which they can produce. So long as affairs are fresh and piquant they are stimulants enough. But in the inequalities and intervals and fatigues of life, something else is required to hold the spirits up to the high level upon which everything proceeds. As soon as a man resorts to alcoholic stimulants to do this, he has embarked upon a course where all experience shows that he will drink deeper and deeper to final downright intemperance.

Dr. Flagg thinks a cheap and wholesome beverage for the 'masses,' for laboring people, is desirable. While it may be well enough for every gentleman of leisure, it is to be the poor man's special blessing, saving him from the swill of the brewery and the fire of the still. Facts will stand on the side of the reverse reasoning. If wine is to be harmless atall, it will be with men not prone to enterprising heats, but given to the relishful pleasure of sipping just for the delicate flavors, for the aroma, for the fine *bouquet*, of wine. Men who need to have their blood up, and kept up, and resort to wine to supply the flagging stimulus of affairs; such men will not drink for the flavor, but for the feeling.

It is for the sake of being roused; it is to be stimulated; it is in plain language, to have the first exhilerations of drunkenness that laboring men drink, will drink, and have always drank cider, beer, wine, and brandy. The result of affording wine in abundance to such a people as ours, will be to prepare them for stronger drink just as soon as wine, by frequent use, is no longer stimulating enough. Wine will play jackal to brandy for the rich, and to whiskey for the poor. We have some facts on hand touching this matter of popular wine-drinking which, if necessary, we shall employ at another time. Meanwhile, we are glad to see grape-culture spreading for the production of table-grapes; for the manufacture of wine, in so far as a supply of pure wine is needed for medicinal purposes. Farther than that, we are opposed to wine-making. And as to cheating whiskey out of its authority over "the dear people" by the blandishments of Hock and Champaign, or redeeming our barley and cornfields from the abominable persecutions of the brew-tub and the still, by the conservative energy or evangelizations of grape juice, we shall believe it when we see it; and we shall just as soon expect to see fire putting out fire, and frost melting ice, as one degree of alchoholic stimulus curing a higher one.

Recipe to Make Tomato Catsup.—Take a gallon of skinned tomatoes; four table spoonsful of salt; four of black pepper; three of mustard; eight pods of red pepper; half table spoonful of allspice. Grind these articles fine, and simmer them slowly in sharp vinegar, in a pewter basin, three or four hours, then strain through a wire sieve, and bottle close. Use vinegar enough to make a half gallon of liquor when the process is over. It may be used in two weeks, but improves much by age. D.

COMMUNICATIONS.

SPRING OF 1846 IN WAYNE COUNTY.

The average noon temperature of 3d mo. was 51°, the highest 68° and the lowest, which was the first day of the month, 26°. On the 3d bees were seen abroad, (noon temperature 48° on that day,) and the snow nearly gone from wagon paths by evening. 4th, beautiful, calm, spring-like morning. Sugar-water running; yesterday (48°) and to-day (53°.) In the woods, snow still about 10 inches deep. 5th. Snow in streets wholly melted (58° at noon;) but some remaining in shaded woodlands. 9th, 46° at 7 o'clock A. M. 10th, 44° in the morning. A little snow remaining in shaded patches. 13th, 52° at 7 o'clock A. M.. Grass, green. The points of lilac leaves and scales, showing. After this the mercury sank in the mornings to 30°, and upwards to 40°; there were several small snows; and on the 26th, snow enough to whiten all the houses. On the 30th, the thermometer stood at 27° at 7 o'clock A. M.; and the ground, even where it was covered with grass, unless heavily coated, was solid. Ice ¼ inch thick. There were 2¾ inches rain during the month.

FOURTH MONTH, (APRIL.)

Average noon temperature 61°, highest 86°, lowest 42°; and the day before it was 70°. 2d. Red maple (A'cer Rúbrum) in full bloom. 6th. Lombardy and other poplars in bloom. 8th. The ground frozen. Ice 1-8 inch. Very windy at night for a day or two past. Salix conifera (a swamp willow) in full bloom. Caltha palustris (a yellow flower of swamps and bogs) nearly blown. 9th. Ice this morning. Sanguinaria (blood-root,) Anemone thalictroides and town peach trees in blossom. 10th and 11th. Very windy. 12th. Snow ¼ inch deep. 13th, 30° at 6 o'clock A. M. Ground solid. 14th. Ground froze this morning. 17th, Blooms on currants and Prunus americana or wild plum. Acer rubrum (see 2d of this month) out of bloom; but many sugar trees in full blossom; and perhaps they were never more beautiful. Dandelion and Claytonia in flower. 19th. Peach trees everywhere (town and country) in bloom. 21st. During the last four days, there has been a rapid development of leaves and blossoms in everything: cherries, pears, plums, and apples in bloom. At 3 o'clock P. M. 78°. 22d, 6 o'clock A. M., 60°. 23d. The past has been emphatically the *blossom-week*, of fruit trees and shrubs, this season. 24th. Red-bud in bloom. Woods beginning to look green. Grass universally green. 25th The petals (flowers) of the monstrous pippin and of the Morello falling; while the Neverfail (young and old trees) barely show a disposition to leafing. 28th. Very windy. Neverfail blooming and leafing, equally. Locusts beginning to look green. Lilacs in full bloom. Woods generally green. Wind strong, and hard; and half mile from town, hail. 29th. Morello blsssoms all fallen. Three inches of rain.

FIFTH MONTH, (MAY.)

Average noon temperature, 73°, highest 83°, lowest, 62°. 2d. Quince in bloom; also white mulberry. 3d. Peach blossoms all gone. 4th. Woods universally green. Apple blooms fallen. Dogwood, wild crab-apple, and buckeye in full blossom. 7th. Lilac blossoms fading. Lightning and thunder. Cherry blossoms fallen. During the rains of the 6th and 7th, the waters of Morgan's and Martindale's creeks were raised 12 ft. washing off sixty akers of soil lying in their delta, with their crops; and exposing the gravel below. Richmond streams not remarkably high. 10th. Snow-balls in bloom. Lilac flowers fallen. Coral honeysuckle blooming. 11th. Locusts blooming (Robinia.) Ailanthus leafing 50° at 6½ o'clock A. M. On the 12th, and 19th, at 6 o'clock A. M. 48°. 26th, at 78° at 7 o'clock A. M. 12th. Locusts fragrant, and everywhere in bloom; even trees not more than one inch in diameter, bearing their burden of flowers. Dogwood blooming. 25th. Locust flowers fallen. 16th, 52° at 6 o'clock A. M. 27th. Very dusty for the first time this year. 31st. About half the privet blossoms expanded. Four inches of rain. I measured some stems of spear-grass (Poa Pratensis) this month, 4 feet 7½ inches long. J. T. P.

SUMMER OF 1846 IN WAYNE COUNTY, IA.

SIXTH MONTH, (JUNE.)

The average temperature of this month was 71 deg., highest 84 deg., lowest 60 deg. At 5 o'clock on some mornings the mercury stood at 54 deg. and 56 deg. On the 19th there was a storm. 1st. Cedar birds (20 or 30) eating my white mulberries which are ripening. Grasshoppers very destructive in clover-fields. 12th. Flax blooming; and out of bloom on the 20th. 19th. Hail and rain-storm. Tortoise-beetles (Cassida aurichalcea) on my morning-glories. 25th. Great numbers of black-birds in wheat fields, eating grasshoppers: some were seen feeding their young with the insect. Hay harvest: growth of grass in many fields very unequal. There were 12 rains during the month—6¼ inches.

SEVENTH MONTH, (JULY.)

80 deg. the average noon heat; 89 deg. the highest; the lowest 70 deg. 1st. Wheat harvesting generally; some paying $1.25 a day for hands; crop everywhere good. My town morellos plentiful, fine, large, and perfect; my country trees bearing an equally abundant crop, but smaller and defective fruit; the effect of different culture. Seed of orchard-grass ripe; also that of meadow-foxtail. Whole fields of young clover, which came up well this spring, among oats and wheat, now found to be extinct; the grasshoppers having apparently eaten it up: oats, wheat, and timothy in the same fields, untouched. 5th. Wind strong enough to prostrate some trees. Fulgoridæ on my Japan lily, snowberry, young locusts, &c. Timothy very good this season: a few stalks selected, 5 and 6 feet high, and one with a spike 11¼ inches long. 14th, Wheat principally housed. Corn generally in tassel. Rain 3¾ inches.

EIGHTH MONTH, (AUGUST.)

Average noon heat of the month 80 deg.; highest 89 deg.; lowest 72 deg. 8th. Mercury for several days past at 80 deg. in early morning, say at 6 and 7 o'clock. and the same, as late as 10 o'clock at night: such a temperature, with a calm atmosphere, made the weather very oppressive. 18th. Apples abundant; pear, plum, cherry and

quince trees all fruitful; and grape-vines very productive, but many grapes perished by a kind of dry gangrene; some vines suffering much more than others; and some not atall. Some peaches brought into town from the north part of the county; and some from Little Blue River: sold at fifty cents a bushel. (I saw no peaches as far north as Portland, in Jay county.) Abundance of melons of all kinds; and remarkably good: a muskmelon, a foot long, sold for a cent: prices for all kinds of melons varying from one to ten cents. Bacon five cents for best hams; wheat forty cents; flax-seed sixty-two and a half cents; hay $4.00 for 2000 lbs.; butter six to eight cents. 19th. Buckeye leaves shed from some trees. The 19th to 22d inclusive, were close, damp, rainy or cloudy, and oppressive days, during which, many of my young sage plants, which had just expanded their seminal leaves, perished by what gardeners call "damping off." 23d. My grapes against an east brick wall ripe about nine days earlier than those on a frame. Our millers report the wheat this season four to eight pounds lighter to the bushel measure than that of last year. Rain 5¼ inches. On the 28th, there was a strong wind, with rain: several trees blown down. By examining "Summers in Wayne County," p. 173, it will be perceived that we sometimes have frost in this month, as well as in the two preceeding ones: there appears to have been none this summer. In the summers reported I have omitted the temperature of 8th month, 1842: it was, 83 deg. 67 deg. 75½ deg.; also of 8th month, 1843: 83 deg., 68 deg. 76 deg.; and also of 8th month, 1845: 86 deg., 72 deg., 79½ deg. The first summer month of this year had a lower noon temperature than any other I have registered; but the last month is surpassed by but one other, that of 1838, in elevation of temperature. J. T. P.

SOME ANSWERS.

Correspondents must not be discouraged if their questions are not immediately answered. Put the questions in the Farmer and Gardener, and wait patiently for the required information. If the queries are not responded to, they furnish topics for useful reflection and experiment; they show what people *want* to know; and when some day, we become able to teach them, we have the satisfaction of knowing that the information we are about to convey, is not uncalled for.

I have kept my eye on a few questions in the present volume for some time past, hoping somebody would answer them. As I have not been gratified, the querists may take the following at my hand:

Cedar Trees, p. 165.—In cedar trees, the two essential parts of the flower (the stamens and the pistils) are found on different plants. The pistillate flowers only bear seed; and to this end the proximity of a tree bearing staminate flowers is necessary. Hence, some cedar trees are often found loaded with berries; while on others not a berry is ever seen—the trees cannot produce them. The seeds should be separated from the berry, and immediately planted; or if not planted till spring, they should be subjected to the action of boiling water before sowing them. But Aaron Aldredge, near Indianapolis, sells the young trees at so low a price, and packs them up for a distant market, so successfully, that it is doubtful whether it would not be preferrable to buy them of him than to raise them.

Sprouts at the Root of Fruit Trees, p. 165.—Such sprouts ought by all means to be cut away; for if they are not "seriously injurious" when small, they will soon become a detriment; and they are at no time very ornamental to an orchard. I think the querist will find that if properly removed, soon after what is called the second or summer's growth of the tree commences, these suckers will be much less likely to re-appear. I have succeeded by this means in suppressing this radical spray in my own orchards.

Time for Cutting Timber, &c., p. 38.—My attention was first turned to this subject a long time ago, by a writer in Prof. Silliman's Journal of Science; and my own observations, reported in the same Journal, were corroborative of that writer's statements, that timber cut in summer when the tree is in full foliage, is much more durable in the heart-wood than in the sap, while that cut in winter decays first at the heart. I have been able in a number of instances to determine by the appearances of rotting logs in the woods, whether the trees had been prostrated in summer or in winter. I have had some experiments on this question in operation for a number of years past; and in due time, hope to be able to report profitably. Where timber is sheltered, as in a building, it appears much less important when it is cut. Logs may be properly "worked" both before and after they are seasoned, if care is taken to have all parts of the frame *equally* seasoned or equally green, so that all the parts may shrink alike in the building. It is not advisable to tenon and mortice the timber one season, with the intention of putting the pieces together the ensuing season, on account of the warping during the delay.

How to Cover Tall Weeds, p. 189.—I have been anticipating a communication from some farmer to the editor respecting his doubts about plowing under weeds "breast high," in Virginia. Perhaps the editor means, that Virginia's soil can't raise weeds breast high; and therefore cannot cover them. But farmers *do* bury weeds with the plow in some sections of the country, even *more* than breast high, by attaching a heavy log-chain to the plow, so as to press the weeds to the earth just before the sod is turned. J. T. P.

Cruelty to Brutes.—There is no telling in how many ten thousand different ways, education would be profitable to the people. A horse stumbles, or frightens, and behaves unruly: John becomes provoked at the animal's conduct, and applies the butt end of his whip-staff to his head; time apologizes for the horse, by the loosening and final separation of his hoofs, showing that inflamation of his feet, had rendered them so tender that stumbling was unavoidable; or the horse loses his sight, showing his master, when too late, that enfeebled or depraved vision had been the cause of his unruliness. Or it may be that the horse will not "back;" Jehu never dreams that he *cannot* back; but by violence he is determined that he *shall* back. Or, peradventure, the horse is constantly disposed to back, when he should go for-

wards; and this is still more provoking; and the poor brute is beaten without mercy for what he cannot avoid. For in both these cases, it has been ascertained that the brain is dropsical or otherwise diseased, in parts corresponding to the functions of backing or pulling. Men would do well, passionate men particularly, to *think* before they strike: it is possible the motions of the horse are as contrary to his will, as an ague-shake is contrary to the will of his master. J. T. P.

SWEENEY, SWANEY, SWINNEY, SWEANY.

Can any body tell whence this word originated? or who invented it? or what the right spelling is? or in what the disease consists essentially? I have never seen the ailment described under such a name; and the only two remedies proposed for it, have been: puncturing the skin over the affected part and blowing up the interior with an inserted tube; and secondly, puncturing the part in several places with an awl and scratching the solids below, all over with its point; practices which have been justly stamped as "relics of ignorance and barbarity." Is not the affection originally a sprain; and the subsequent shrinking or emaciation of the muscles the result of the unavoidable inaction of the parts? J. T. P.

CAHOON PIE-PLANT.

[Our readers will remember the account, one or two numbers back, of an enormous pieplant raised by Mr. Cahoon; which, as it appears now, is a seedling of his own raising, and we have named it after him. We append his account of it and of the method of culture.—*Ed.*]

SOUTHPORT, W. T., Sept. 12, 1846.

I have received the September number of the Western Farmer and Gardener, in which you refer to the Prairie Farmer's notice of my pie-plant, giving it a very strong puff yourselves, by way of passing it round. You request me to send you an account of the kind, whence obtained, on what soil cultivated, method of culture, &c. I raised it from seed given me by a friend, seven years ago; whence he obtained the seed I am unable to say. I sowed the seed and got four plants, which I have propagated from ever since. To all appearance they are exactly alike. I have been able to obtain seed from it but once (three years ago.) I have sowed the seed every year since. I have now over 100 plants and am unable to distinguish any difference either in looks, flavor, or in any other particular. I frequently have them large enough for use the first season from the seed: the second year they will bear cutting freely. It is not as early as some other varieties, but it produces abundantly and grows vigorously till cold weather sets in in the fall.

It is cultivated on a very moist, sandy, peat soil, with a large mixture of decayed vegetable matter. Before the land was put under cultivation, water stood on it more than half of the year. It is at the foot of a sand ridge, out of which living springs of water are constantly flowing. The water is cut off from the plants by a ditch three feet deep and ten feet from the plants, water always remaining within three feet of the surface of the ground immediately under the plants. I have raised it on dryer land, but never had it grow so large. My mode of cultivation is very similar to yours as described in the present number of the Farmer and Gardener, (No. .) I mix with the soil I have described a very large portion of old barnyard manure and rotten leaves, and bones and blood from the slaughter-house. I have one stock larger than those sent the Prairie Farmer. It measured four inches from the foot or crown of the root, nine inches in circumference, twenty-two inches long, and the leaf measured, by placing a piece of twine round on the border, a few inches over *sixteen feet*. This leaf would have made a tolerably fair-sized umbrella. Inclosed is some of the seed, and next spring I will send you one of the buds or crowns; will pack it with care, and deposit it with the editors of the Prairie Farmer, and will advise you when it is in readiness for delivery. The Farmer and Gardener will be very acceptable, if you think my offer will be value received for it. You had best plant one-half of the enclosed seed this fall, and the balance next spring. I planted from the same late in June last, and have now very fine plants growing from it. B. P. CAHOON.

REMARKS.—It will be perceived that this, naturally enormous variety of pie-plant, is subjected to the highest possible stimulation. Barnyard manure, leaf-mold, blood and bones! that *is* manuring with a vengeance! If there is any *grow* in it, such a course must bring it out to the uttermost. But the special feature of interest is the probable effect of profuse moisture upon the cultivation of this hitherto dryly cultivated esculent. It is well worthy of experiment whether, like celery, and some other plants, Rhubarb is covetous of water. If so, the plantation should be near the kitchen, slight furrows should be left between the rows and arrangements made by which the bed could be saturated once or twice a week with the refuse water of the kitchen, &c. We commend the trial to our readers, and shall ourselves see what can be done with Rhubarb treated as a semi-aquatic.—*Ed. Far. and Gard.*

FACTS AND CRITICISMS.

EVANSVILLE, Sept. 7, 1846.

SIR:—I have enclosed some papers for you, and if you like to make use of them you can. The one on salt, if you alter the word *kingdom* on the first line to *country*, it will perhaps read better here; the weight per aker is calculated by the custom in England of 112 lbs to cwt.

Yours respectfully,

T. BISSELL.

SALT AS A FERTILIZER.—From Experiments that have been made by Agriculturalists in various parts of the country, it appears that salt when judiciously applied to land is one of the cheapest and most valuable manures with which we are acquainted. It is presumed that the very limited use of salt in Agriculture, is owing to the want

of knowing its valuable properties, and in what manner it should be applied; in order to supply that deficiency, the following observations and directions for its use, are respectfully submitted to those farmers who may incline to try this valuable manure.

Agricultural salt, the most beneficial effects have been known to result from its application to fallows at the time of breaking them up, it destroys the weeds and venom that abound in the soil, and converts them into rich manure. Land thus prepared will be found to produce the most abundant crops, and the grain will be of the finest quality. Light soils appear to have received the greatest benefit from the use of salt, but in some instances it has been beneficial to stiff clays, particularly in long droughts; the particles of salt penetrate and soften the most stubborn clods, and enable the farmer to begin his operations in the driest seasons. Where salt has been applied to land intended for turneps, the fly has seldom taken them, and they have been known to stand the most severe winter without being injured by the frost.

Pastures have been much improved by the use of salt, particularly where the ground has been rough or sour, or weeds of any kind have abounded, and grounds that are flooded in the winter are benefitted by it, as it converts into a rich manure the vegetable and animal remains that are deposited by the waters, and restores the natural proportion of salt that has been thereby washed from the soil.

Any directions for the use of salt cannot be strictly applicable in all cases, but the following exhibits the quantity in general use for different crops and other purposes.

Crop.	*Quantity per Aker.*	*Time for applying it.*
Fallows,	7 to 9 cwt.	Breaking up of Win.
Wheat,	4 to 5 cwt.	Bef. or at seed time.
Beans & Peas,	4 to 6 cwt.	Early in the Spring.
Barley & Oats,	3 to 4 cwt.	Do.
Potatoes,	4 to 6 cwt.	Win. or early in Spr.
Onions,	3 to 4 cwt.	Winter.
Carrots and Parsnips,	3 to 4 cwt	Winter.
Hops,	3 to 4 cwt.	Winter.
Hay,	¼ cwt. per load,	Time of stacking.

Composts of manure, 1 cwt. per Cart load.

Barley.—At page 108, vol. 2, it states that barley flour makes a bread, and is very much eaten in some countries, and that the people are very fond of it, when they get used to it. I believe there is as much or more grown in England, than any other part of the world, but no person will eat it if they can avoid it, and it is only in times of scarcity that it is eaten at all.

Peas.—Page 134, vol. 2, "John Bull don't know beans," that is correct; white beans are neither grown or sold in England; but they use white peas instead, and the soup is prepared something like the soup described by M.; and the pea pudding is boiled in a bag. The peas boil the softest which are grown on a light sandy loam, see page 108.—When peas are cheaper than wheat, the millers in in England grind them and mix them with the flour, and sell it to the public for wheat flour.

Red Top and Timothy.—Page 110, vol. 2. I have been informed that these grasses will not grow together, that the red top will destroy the timothy in about two years; and that the red top will grow an very wet land, and that timothy will not.

A few Beans cultivated in England.—Page 377, vol. 1. Although the statements in Mr. Colman's European Tour are pretty correct, I don't know how he missed the beans, for it would be a difficult thing to find a garden without either *Broad Beans or Long Pods.*

Parsnip seed won't grow.—See page 45 and 85, vol. 1 I planted some seed this year which was two years old, and they did not grow, I planted some one year old, and they did grow.

Preservation of Bacon.—Pages 171 and 183, vol. 2, contains some plans for curing and keeping bacan. I killed some pigs late in the spring of 1845, I burnt the hair off, not scalded it, I took out every bone salted it, and in about three weeks hung it up to dry; it kept sweet and well, until we eat it, which was towards the fall of the year. I neither smoked it, or covered it over with anything but the salt.

Peach trees, winter killed.—Page 166, vol. 2. I had a few peach trees which did not grow this last spring, I supposed that the severe frost in November last, froze the sap whilst the trees appeared to be as green as in the summer, I cut the stem off as far as it appeared to be dead, and they have all got some young shoots growing thereon.

Wood Cuts.—Would it be possible to introduce some wood cuts or other cheap engravings into the pages of the Farmer & Gardener? it would make it more attractive by showing the plans how things were done, or a view of any newly discovered implement, so that people might have some idea of it; perhaps the inventor would pay the expense as it would advertise it more advantageously for sale if required.

[The Farmer and Gardener has just paid its own expenses during the two years of its existence; affording nothing to proprietor or editor except the pleasure of preparing it, which is not a little one. We will improve it just as fast as means are furnished us. We have offered to brother cultivators as good a paper, circumstances considered, as we could, and at an extremely low price. It must now rest with them, whether it shall be continued, and if so, upon what scale. The Cultivator, at Albany, N. Y., has probably not far from fifteen to twenty thousand subscribers, paying 75 or 100 cts. The Prairie Farmer, we suppose, has 5000 or 6000 subscribers, may they both double their number! They certainly deserve it. Our first volume ended with 700 paying subscribers, and our second will end, probably, with between 1200 and 1500 subscribers. This will barely print the paper. It will not leave a farthing of profit, not a penny to be laid out in improvement! Shall we hold on in the same way? or shall we give up? or shall we have a larger circulation? It rests entirely with the friends of the Farmer & Gardener.] Ed.

Aker.—At page 151 and 172, vol. II, are two articles on this word. I have often thought it a

great absurdity to retain any letters in a word which are not pronounced. How often do we meet with words, and after we have spelt them, don't know what to call them; we refer to Webster, Walker, Johnson, Bailey and a host of others, each one, most likely, giving us a different opinion. Who is to decide when these learned authorities disagree? There is a gentleman at Bath, (Somersetshire, England,) who has invented a universal language for all the world. He calls it *Phonography*. He commence teaching it to the public some three or four years ago, and with a knowledge of it, we can read and understand any language now in existence. The name of the inventor is Isaac Putnam.

Flour and Bread. At page 26, vol. II, there are some calculations on these two important articles of food. The English bushel of flour is fifty-six pounds. Good dry flour will absorb forty lbs. of water to make it into dough; and if well baked, it will lose sixteen pounds again. If the flour is new and not of good quality, it will not take so much water, or make so much dough. The English baker is allowed, by law, thirty-six cents a bushel for yeast, salt, fuel, trouble, and profit, but he gains a deal more in general. Flour three or four weeks old makes more bread than flour just ground, because it is drier. Until sometime after the time of Henry the 8th, millers were not allowed to buy corn, grind it, and sell the flour to the public; but only to grind flour and take so much toll for their trouble.

A small portion of carbonate of ammonia to a bushel of flour, will make bread very light; or, about eight pounds of good mealy potatoes, boiled, mashed, and strained into a bushel of flour, will also make the bread very light. Alum is used by the bakers, but the bread soon goes sour.

Common flour is the cheapest, but it does not make so much bread as the best sort. The wholesomest bread is made from good flour, with the *pollards* or *sharps* not taken out. Pure flour is very binding when made into bread. The English people are very particular in getting stale bread to eat, if it is made properly and is in good condition: if it is eight or ten days old it will suit all the better. The American likes it new; just hot from the oven suits his taste the best. J.B.

Important Truths in Connection with Agriculture.

Mr. Editor,—In the course of my readings, I found the following condensed paragraph, in "Chamber's Information for the People," and, for the sake of those for whom it was written, if you think it worth while, please publish it. D.

1. Land to be well cultivated, must either be the property of the farmer, or be let on a moderately long lease.

2. The husbandry must be *convertible*, that is, on a precise system of rotation of grain and green crops.

3. Cattle must be kept, to produce a due share of manure for the fields.

4 If the land be moist, or liable to heavy rains, it must be effectually drained.

5. Deep plowing, and thorough pulverizing of the soil, are essential.

6. The fields must be properly fenced and of easy access.

And, lastly, no land will be profitable as a speculation, unless closely superintended by a farmer whose mind is alive to all its varied wants, and neither rash in running into experiments, nor prejudiced against well authenticated improvements.

SELECTIONS.

PREPARATION OF TOMATOES.

We condense the following modes of cooking and preserving the tomato, from the Ohio Cultivator, which appear to us to be worthy of the attention of housewives and cooks.

To make tomato omelet.—Take a stew-pan, and melt a piece of butter the size of a nutmeg. Mince up an onion very fine, and fry it until quite brown. Add ten peeled tomatos, season with pepper and salt, and stir them until cooked to a soft pulp. Then stir in four beaten eggs, until the underside of the mass becomes brown. Lay a plate on top, turn the pan upside down, and the dish is ready for the table.

Tomato marmalade.—Gather full-grown tomatos while quite green. Take out the stems and stew them until soft, then rub them through a sieve, put the pulp over the fire, season highly with pepper, salt, and powdered cloves, and let it stew until quite thick. The article will keep well, and is excellent for seasoning gravies.

French mode of cooking tomatos.—Cut ten or a dozen tomatos into quarters, and put them into a sauce-pan with four sliced onions, a little parsley, thyme, one clove, and a quarter of a pound of butter. Set the pan over the fire, stir the mixture occasionally for three-fourths of an hour, and then strain it through a coarse sieve or colander. It may be served with mutton-chops or beefsteak.

To make Rhubarb Wine.—To every pound of green rhubarb stalks, when bruised, put a quart of cold spring water; let it stand three days, stirring it twice in the day, then press, and strain it through a sieve, and to every gallon of the liquor, put two and a half or three pounds of good loaf sugar; barrel it, and to every five gallons add a bottle of white brandy; hang a piece of isinglass in the vessel, suspended by a string, and stop it up close. In six months if the sweetness be sufficiently off, bottle it for use, otherwise let it stand in the cask a longer time.—*Gard. Chron.*

Preserving Rhubarb.—In addition to "preserving it with sugar like raspberries," rhubarb can be very successfully and agreeably preserved—in bottles as green gooseberries are—peel the stalks and cut them into pieces as for a tart, and then treat them as if they were gooseberries. Rhubarb bottled thus gives us excellent tarts and pies at Christmas. It can also be dried as angelica, and makes a very agreeable dried preserve. Have any of your correspondents ever tried dried strawberries? They are very good, and the abundant crop of this year will give material to experiment on.—*Ib.*

Bones dissolved in caustic ley.—I have seen much in your paper of bones being dissolved in sulphuric acid as a manure. Are you aware that bones may be dissolved in the alkaline ley of the soap-boiler, and will form a paste of the consistence of butter, which may be reduced to any thinness of fluid required for application as a liquid manure?

Am I wrong in believing that, as the solvent power consists solely of soda-ash and lime, it would be a more powerful manure than the bones with acid? There was a patent some years ago for making soap in this manner; whether the patent is in force now I do not know, but that can easily be discovered if thought worth while.—*Ib.*

THE GREAT CENTER of the UNIVERSE PROBABLY DISCOVERED.

Prof. Mitchel, of the Cincinnati Observatory, communicates to the Gazette an astronomical discovery, which, if verified, will form an epoch scarcely less memorable than did Sir Isaac Newton's. We are happy in believing that a large portion of our subscribers are deeply interested in whatever is of scientific interest.—*Far. & Gard.*

CINCINNATI OBSERVATORY,
8th September, 1846.

MESSRS. EDITORS:—I have just received by the last steamer, No. 566 and 567 of the "Astronomische Wachrichten," a journal published at Altona, near Hamburgh, and conducted by the celebrated Prof. Schumacher. These two numbers are almost exclusively taken up with an article by Doctor Maedler, Director of the Dorpat Observatory, Russia, well known to the astronomical world, in which he announces the extraordinary discovery of *the great central Star or Sun*, about which the universe of stars is revolving, our own sun and system among the rest.

This discovery, the result of many years of incessant toil and research, has been deduced by a train of reasoning and an examination of facts, scarcely to be surpassed in the annals of science.

Guided by the researches of the elder Herschel as to the figure of the stratum of stars to which our sun belongs, Dr. Maedler, as a first approximation, locates his grand center somewhere near the *Milky Way*.

But as the milky way divides the sphere of the heavens into two unequal parts, he argues that the center must be searched for in the smaller of the two parts.

Again, it has been shown that our sun is nearer the southern than the northern side of the milky way, and hence we must expect to find the great center not only in the smaller portion of the heavens, but also in the northern part of this smaller portion.

Another approximation to its position is obtained by the learned author of this remarkable paper, from an examination of the sun's motion through space, and he reasons that the point in the heavens towards which the entire solar system is urging its way, is the pole of a great circle, with in which the center about which the sun is revolving must be placed.

This subject has been ably discussed by Argelander and by Otho Struve, and the point in question has been ascertained to a very close approximation. If from this point, determined by Argelander, (which is in the constellation Hercules,) as a pole, we describe a great circle, it intersects the milky way in the constellation Perseus. By useing that point determined by Otho Struve, we find this circle cutting the milky way nearer to the constellation Taurus.

Having made this rough aproximation to the grand center, Mr. M. prosecutes the research by means of the proper motion of the fixed stars, and after many trials of different stars, at length finds a point which satisfies all the conditions yet presented by observation.

This discovery he announces in the following language:

"I therefore pronounce the Pleiades to be the central group of that mass of fixed stars limited by the stratum composing the milky way, and Alcyone as the individual star of this group, which, among all others, combines the greatest probability of being the true central Sun."

By a train of reasoning which I shall not attempt to explain, he finds the probable parallax of this great central star to be, six thousandths of one second of arc, and its distance to be 34 millions of times the distance of the sun, or so remote that light with a velocity of 12 millions of miles per minute, requires a period of 537 years to pass from *the great center* to our sun.

As a first rough approximation he deduces the period of revolution of our sun with all its train of planates, satellites and comets, about the grand center to be *eighteen millions two hundred thousand years.*

The ascending node of the orbit is (1840) in 236 deg. 58 min. of longitude, and the sun will reach this point A. D. 154,500, or in about one hundred and fifty-two thousand six hundred and sixty years.

All these numbers are given as first rough approximations. The author of this wonderful theory throws it before the world, and declares that he will yield it on condition that *one single star* can be found, by any astronomer, within 20 deg. or 25 deg. of his great centre, in which a well determined motion towards the *north* exists. His theory indicates that the proper motion of all stars thus situated must be towards the *south*. Such is a brief outline of the wonderful facts announced by Dr. Maedler. The entire paper will be translated and published in the Siderial Messenger.

WHAT is a PARAPETTICOAT?

We are astonished at the numerous inquiries that have reached us about this article. Its name reveals its nature. It is a hybrid between a parasol and a petticoat. This is not banter, but fact. And why should there not be such a thing? What is there *in rerum natura* to prevent an ingenious person from applying those two needful articles of shelter and dress to gardening purposes? They will fade, and wear thin, in the custody of the most economical gentlewoman, and to find a use for them afterwards is an adaptation of means to end which cannot be too highly commended.

Let us give a receipt for making a parapetticoat. First find a good sized parasol, or small umbrella, covered with cotton, and not rubbed into holes. Then select a cast-off petticoat, not a crinoline, which Mr. Malaprop calls a kremlin, nor yet a flannel, but some other form of the vestment; it need not be very full; indeed, it will be the better for being scanty; sow up the opening, and it is ready for attachment to the parasol. For this purpose the latter instrument must be opened, and kept so; then the upper end of the petticoat is to

be sowed to the edge of the parasol, and a staff six feet or more long is to be secured to its handle. Thus the parapeticoat is constructed.

But what a word! cries Sir Erasmus Verbal. What a barbarous compound of Greek and Saxon! The thing may be well enough, but its name is unendurable. Pray call it a parachiton, or a parachitonisk. We can have no objection to the change, if the world prefers it; and we agree with Sir Erasmus, that it will be as well to adopt it when parasol is called parahelion, and parapluie a paraombrion—but not till then.

And what is the parapetticoat for? For, madam! for a most important purpose. It is an instrument of execution; it is the shirt of Nessus; it is the robe of Atropos. It is to enable the gardener to dispatch his mortal enemies. It is to relieve his rose bushes from that foe which he assails in vain with snuff, gas-water, and smelling salts. It is to kill green flies.

The instrument is used thus: In the first place, the petticoat is drawn up till it rests upon the outside of the parasol. The staff of the latter is then introduced perpendicularly into the center of a rose bush, and secured in its place by its being pushed into the ground. The petticoat being then drawn down, the bush is completely covered in by the garment. The gardener then blows his tobacco smoke beneath it; in a few minutes the rose bush is enveloped in a cloud which has no outlet; the green fly seeks in vain to escape from the fatal atmosphere which enters every fold and lurking-place; he clings in vain to his beloved rose-buds; his grasp relaxes; he falls; he dies, and with him

Unnumber'd corses strew the fatal plain.

Five minutes suffice for the execution. The veil may then be raised; the instrument removed, and the operation repeated upon a new horde of delinquents.—*Gardener's Chronicle.*

HORSE RAKE---GATHERING FRUIT.

We extract from the New York Farmer and Mechanic, some interesting facts, read or related at the meeting of the Farmer's Club of the American Institute, Sept. 1, 1846.

Horse Rake.—William Bigelow, of Hartford, Conn., states that he mowed a six acre lot of timothy and redtop—about ten tons on the lot last July, raked with a revolving horse-rake, such as farmers use in Kings county, New York. One horse and one young man raked the whole into windrows about fifteen feet apart. The job was completed in two hours and a quarter—a very hot day.

One man with a rake after old fashion, if smart, could rake four acres in a day with very hard work, that is the largest days work I know of. Mr. Bigelow, with four men, cocked the whole in two hours and a quarter. It is the greatest labor-saving machine we have. The old-fashioned wooden plow, with four pair of oxen and one horse had hard work. One of the No. 11 Bergen plows, with one yoke of oxen and one horse, can do as much and better work in the same time.

Gathering and Packing Fruit.—*Dear Sir*—At your request, I give you my opinion and my experience, with the means I have taken to procure good apples, for putting up for shipment to Europe, or for sending on any other voyage. About the autumn of the year 1836 or '37, I had some thirty or forty barrels of apples to pick; it was when I was at Mr. Cooper's place, at Slongha, N. J., as agent and superintendant to the clearing up of a rocky piece of ground, in the upper part of Bergen Woods, with the intention of making a farm of it.

In the orchard with some other fruit trees were some Newtown pippin trees, and all in a shocking state of neglect. As it had been let run wild, I set about to clear it up, and make it productive. In March, I had the tree scraped with a dull hoe, to which I had put a short handle, to make it the more handy to scrape off the outside dead bark; after this, having trimmed the boughs and branches, I sent to town for a barrel of soft soap, with which I intended to *pay* (smear) the stems and branches of the trees, but when it came, judge of my surprise, to find that the soft soap of New York is made of a little of the commonest grease, very little alkali, some salt and a vast amount of water, making a quivering jelly: (such is the villainous compound called soft soap in New York,) as this was unfit for my purpose, I had to make some myself. With this in a bucket and an old whitewash brush, I sent a man in the orchard to *pay* all the stems of the fruit trees, and all the other trees, which stood near by, knowing or thinking the little depredators I wished to be rid of, might lurk under the bark of any tree that stood in the orchard, or near it, as well as in the fruit trees. It was a "bearing year," as farmers call it, and there was a great crop of apples: and I had very few wormy ones. We picked the apples by hand, and did not pour them from one basket to another without putting soft hay or oat straw between them. While pouring them, we put straw on the floor of the room in which they were stored; there was also straw put on the bottom of each basket, and on the bottom of the cart we carried them in; all this was done to keep them from bruising. After they were all housed, we set to work to sort them, rejecting all which had any defects, and if damp, wiping off the moisture. We next took each apple and rolled it in coarse clean paper, any soft paper will do, (the paper I bought was common wrapping paper, straw paper will answer.) The paper had this effect, it keeps the apples from rubbing each other, and keeps them at a certain degree of moisture, not allowing them to evaporate or receive damp. In the bottom, and around the sides of the barrels, a small quantity of straw was placed, and the apples laid in, one at a time, and as close to each other as they possibly could be, without jamming them. When the barrel was filled, a little more straw was put on the top, and the head of the barrel put in, with an inside lining hoop, to keep the head from being knocked in, by accident; there was besides, a lining hoop put in the bottom head of the barrel, before I commenced packing. These apples were put up to order, and were to go to Sheffield, in England. After taking all these precautions, I wrote a direction to this effect:

"These barrels of apples are not to be rolled or tumbled about; if carted, or sent any way by land, something is to be put on the floor of the cart or

wagon, so as to keep them from being bruised, rattled, or jolted."

The apples when packed in this way were tight in the barrels, and could not be made to rattle with common usage. M. C. W——, who ordered them, informed me that they arrived at the destined place, and were all sound to an apple, and much admired by the consignee for their preservation and manner of putting up. I took the lesson from seeing the oranges and lemons which arrive here from Spain and Portugal, being packed in the same manner.

Those apples which have a close tight skin will keep the best, for the greatest length of time. Of this kind are the Newtown pippin, the Lady-apple, the Russet, and there is an apple in Massachusetts, with a beautiful red cheek, the name of which I do not know, which is also a good keeper, besides, there is the real Rhode Island Greening, which may be kept until the May of the next year.

If the precautions which I have laid down are strictly attended to, any of these may be sent to England as well as the pippin—but the greening is not so good an apple to keep. People may talk as much as they have a mind to, about the heat and damp of ships, and so on, being the cause of the apples rotting; but who could expect that an apple, or any other fruit or vegetable, could be kept from it, if jammed or bruised constantly. Look at the trees in the city, they are all more or less maimed, and of consequence are all more or less decaying. If an apple which is specked with rot or worms, is put among sound ones, it will soon

"Ripe and ripe, rot and rot,"

as Shakspeare has it, and acting as yeast, will soon set the whole into the chemical action of decay. The pulp of all fruit is made to retain and preserve the seed for a certain time, and when it has performed its office, it decays, falls to dust, and goes again to its natural element. I wonder how long a man would live, if he was tumbled, rubbed, shoved and poured about as our apples, potatoes, and other juicy plants and vegetables are? One half of the pleasure of eating the potato is lost, by its being so badly used, with the bruises it gets by shovelling, pouring and carting, on its way to market. Who would not rather stick his fork into a nice mealy one, that has cracked open with the boiling, showing a starchy whiteness, than into a bruised one full of brown and watery spots, and which seems to be dead, with the thumpings it has received? So it is with apples and other fruits, their quality is deteriorated by the abuse they get—but, says the farmer, who is going to take all this trouble? it will do well enough for some to do it—so he sends the product to market; in a little time it rots, or he receives complaints that all his fruit has spoiled; then he opens his eyes and mouth, and says "who would have thought it?"

Yours respectfully, I. C.

To Henry Meigs, Esq.

STRUCTURAL BOTANY,
Applied to Horticulture---Scions.

A scion is a cutting which is caused to grow upon another plant, and not in earth.

Scions are of two sorts, scions properly so called, and *buds*.

Whatever is true of cuttings is true also of scions, all circumstances being equal.

When a scion is fitted on to another plant, it attracts fluid from it for the nourishment of its leaf-buds until they can feed themselves.

Its buds thus fed gradually grow upwards into branches, and send woody matter downwards, which is analogous to roots.

At the same time the cellular substance of the scion and its *stock* adheres so as to form a complete organic union.

The woody matter descending from the buds passes through the cellular substance into the stock, where it occupies the same situation as would have been occupied by woody matter supplied by buds belonging to the stock itself.

Once united, the scion covers the wood of the stock with new wood, and causes the production of new roots.

But the character of the woody matter sent down by the scion over the wood of the stock being determined by the cellular tissue, which has exclusively a horizontal development, it follows that the wood of the stock will always remain apparently the same, although it is furnished by the scion.

While the preparations of the juices being effected by the leaves of the scion, the produce thereof will be the same as the species from which the scion was taken.

Some scions will grow upon a stock without being able to transmit any woody matter into it; as some Cacti, which have only a small central development of woody tissue.

When this happens, the adhesion of the two takes place by the cellular substance only, and the union is so imperfect that a slight degree of violence suffices to dissever them.

And in such cases the buds are fed by their woody matter, which absorbs the ascending sap from the stock at the point where the adhesion has occurred; and the latter, never augmenting in diameter, is finally overgrown by the scion.

When, in such instances, the communication between the stock and the scion is so much interrupted that the sap can no longer ascend with sufficient rapidity into the branches, the latter die; as in many peaches.

This incomplete union between ihe scion and its stock is owing to some constitutional or organic difference in the two.

Therefore care should be taken that when plants are grafted on one another their constitution should be as nearly as possible identical.

As adhesion of only an imperfect nature takes place when the scion and stock are, to a certain degree, dissimilar in constitution, so will no adhesion whatever occur when their constitutional differences are very decided.

Hence it is only species very nearly allied in nature that can be grafted on each other.

As only similar tissues will unite, it is necessary in applying a scion to the stock that similar parts should be carefully adapted to each other; as bark to bark, cambium to cambium, and alburnum to alburnum.

The second is more especially requisite, because it is through the cambium that the woody matter sent downwards by the buds must pass; and also because cambium itself, being organizing matter

in an incipient state, will more readily form an adhesion than any other part.

The same principles apply to *buds*, which are to scions precisely what eyes are to cuttings.

Inarching is the same with reference to grafting that layering is with reference to striking by cuttings.

It serves to maintain the vitality of a scion until it can form an adhesion with its stock; and and must be considered the most certain mode of grafting.

It is probable that every species of flowering plant, without exception, may be multiplied by grafting.

Nevertheless, there are many species and even tribes that never have been grafted.

It has been found that in the vine and the walnut this difficulty can be overcome by attention to their peculiar constitutions; and it is probable that the same attention will remove supposed difficulties in the case of other species.

It is certain that scions thrive better on some stocks even of the same species than others, and that this depends somewhat on the soil in which the stock grows; this is a subject however on which there has been so much discussion, and on which practical experience has yet so much to develop, that no certain general rules can be laid down, particularly in this country.

From what has been said on perspiration it seems that that the practice of budding on the northern side of stems must be correct.

Mr. Knight often applied two ligatures to his buddings on peach trees, one above the bud across the transverse incision, the other below, this last was taken off as soon as the bud adhered, the upper one was left on; thus obstructing the flow of the sap upwards and throwing it into the bud, which then vegetated early and produced blossoms the following spring. As soon as the new shoot had attained about four inches in length the upper bandage was removed and the sap suffered to flow freely. By following this practice with roses, and by judicious heading down, I have obtained very large and healthy bushes on the top of a single straight stem the third year.

Teschemacher's Elements of Hort.

FRENCH MODE OF MAKING APPLE-BUTTER.

In France, a kind of jam, or apple-butter, called *raisine compose*, is prepared by boiling apples in unfermented wine. The must or wine should be reduced by boiling to one half of its bulk, to be continually skimmed as fresh scum arises, and afterwards strained through a cloth or a fine sieve. The apples are then pared, cut into quarters, and put into this liquor (raisine) and left to simmer gently over a fire, with a continual stirring with a wooden spatula or slice, till the apple becomes thoroughly amalgamated with the liquor, and the whole forms a kind of marmalade, which is extremely agreeable to the taste.

When prepared in the northern departments of France, the raisine, after the first boiling, skimming, and straining, is set in a cool place for 24 hours, when a saline liquor, like a scum, appears on the surface. This is removed, and the liquor strained, before it is mixed with the apples, as above. This scum consists principally of tartaric acid, which would spoil the raisine, and prevents it from keeping sweet, but which is not perceivable when the grapes, from which the wine is made, have been ripened in a southern climate. The raisine, when properly prepared, is sweet, but with a slight flavor of acidity, like lemon-juice mixed with honey. The best raisine is made in Burgundy. In Normandy, a similar marmalade is composed of cider and pears, much resembling the "apple-butter," or "apple-sauce," of the United States; but it is not so good as the raisine, being apt to ferment. In some cases, the pears are put into an earthern vessel without water, and placed in a baker's oven, after the bread has been drawn, previously to mixing with water.

The best racine is considered very wholesome, particularly for children, who eat it spread on bread, and for persons in delicate health, whose stomachs will not bear butter. In Italy, the raisine is eaten with *gnocchi* and other preparations of Indian corn, and with maccaroni, to give a flavor to these dishes. There is nothing better to make a dinner relish, and we would always have it, or apple, or cranberry sauce, if possible.—*Amer. Agriculturalist.*

VIRTUES AND VICES.—I once heard one of the cleverest men I ever knew observe, "virtues lie in the medium, vices in the extreme—and every virtue has its attendant vice." The practice of virtues, *with* their attendant vices, is common—the practice of virtues without, alone, rare, excellent and beautiful.—We have generosity and extravagance—justice and severity—tenderness and weakness—economy and covetousness, walking hand and hand. How few there are who learn well to consider and watch over their nature and the habits of their minds, and to avoid the evil tendencies of their constitutional virtues.

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TERMS.—*The* FARMER AND GARDENER *is published* SEMI-MONTHLY, *each number containing Sixteen royal octavo pages, at* ONE DOLLAR *per annum per copy;* SEVENTY-FIVE CENTS *per copy for Four and less than Ten copies; and* FIFTY CENTS *for Ten or more copies to the same Post Office. All subscriptions* IN ADVANCE.